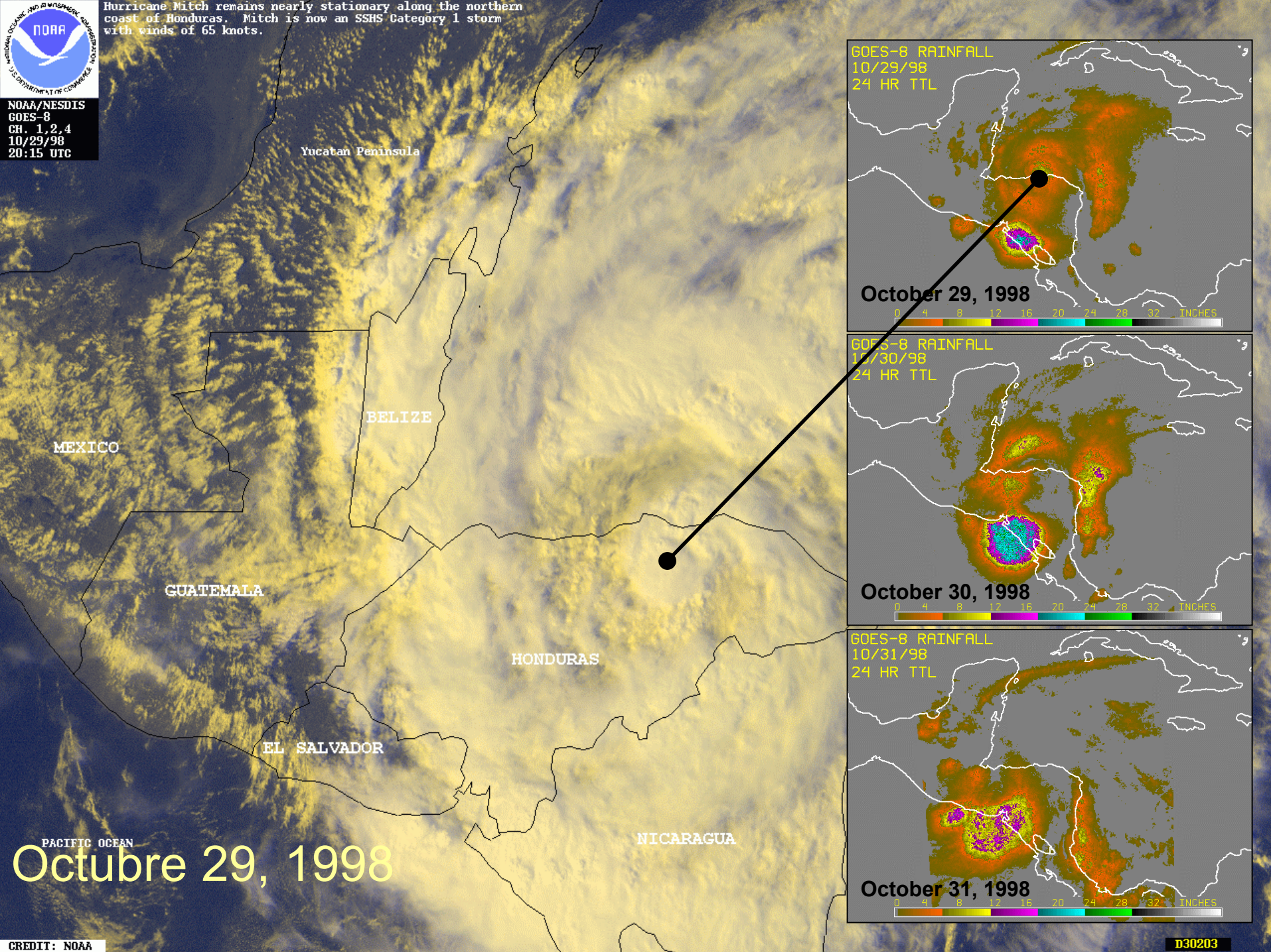
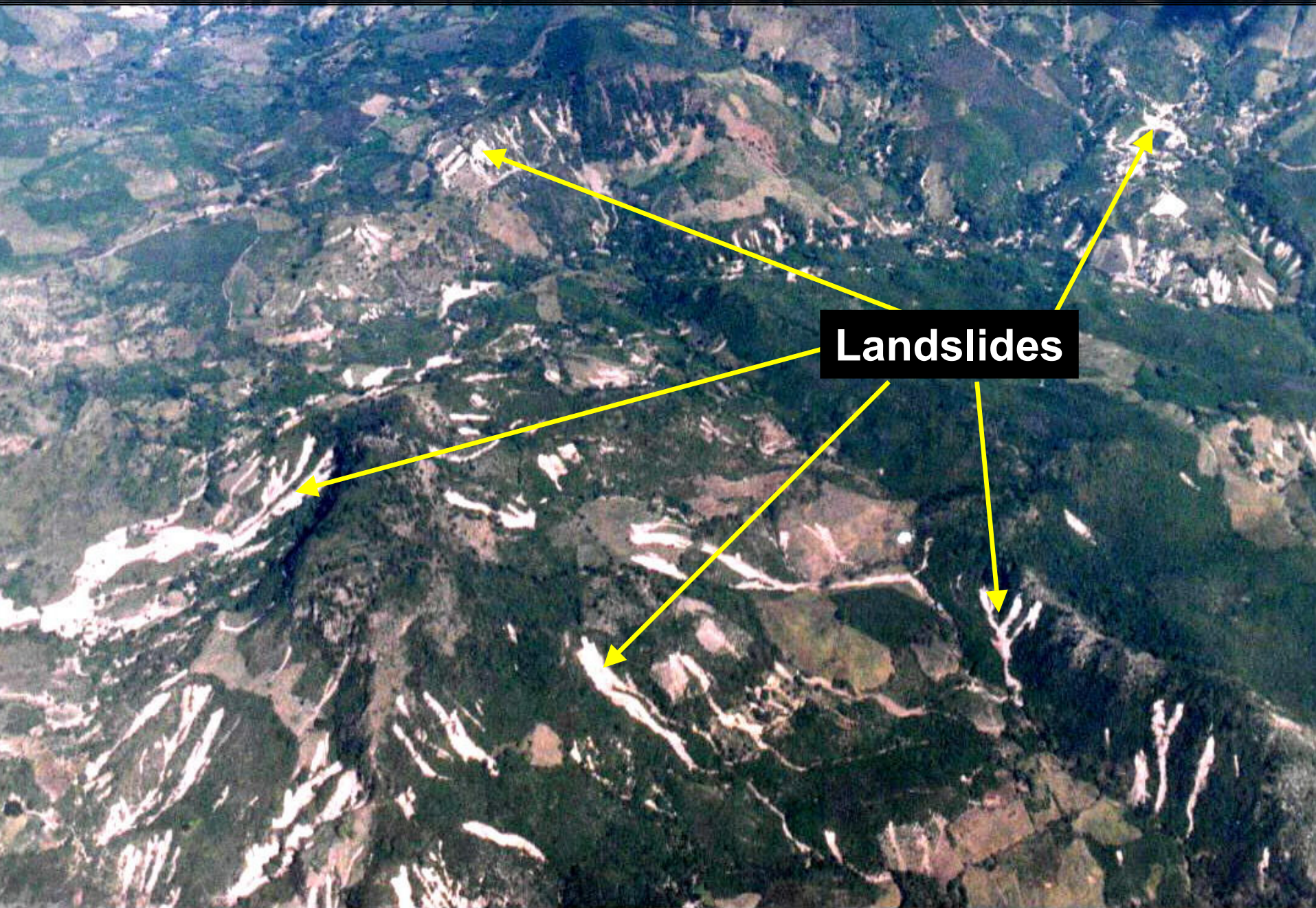
USGS/USAID Reconstruction Program Update



Octubre 29, 1998

Degradation of Upper Watersheds

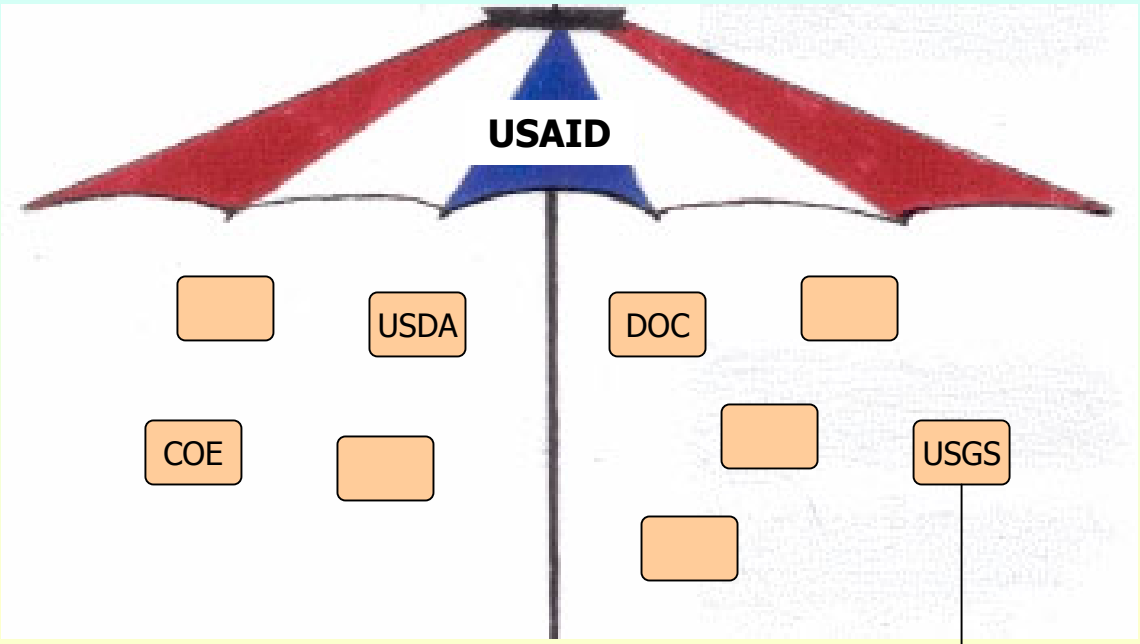



Choluteca
Destroyed Housing
Destroyed Agriculture
Rio Choluteca
Estimated 1 to 2 meters of sediment aggradation throughout Choluteca River channel

Mitch Impacts: Honduras

Flooding and Landslides

- 7,000 Fatalities
- 33,000 Homes Destroyed
- 50,000 Homes Heavily Damaged
- 95 Bridges Destroyed
- 75 Bridges Heavily Damaged
- 70% Road Network Damaged Nationwide



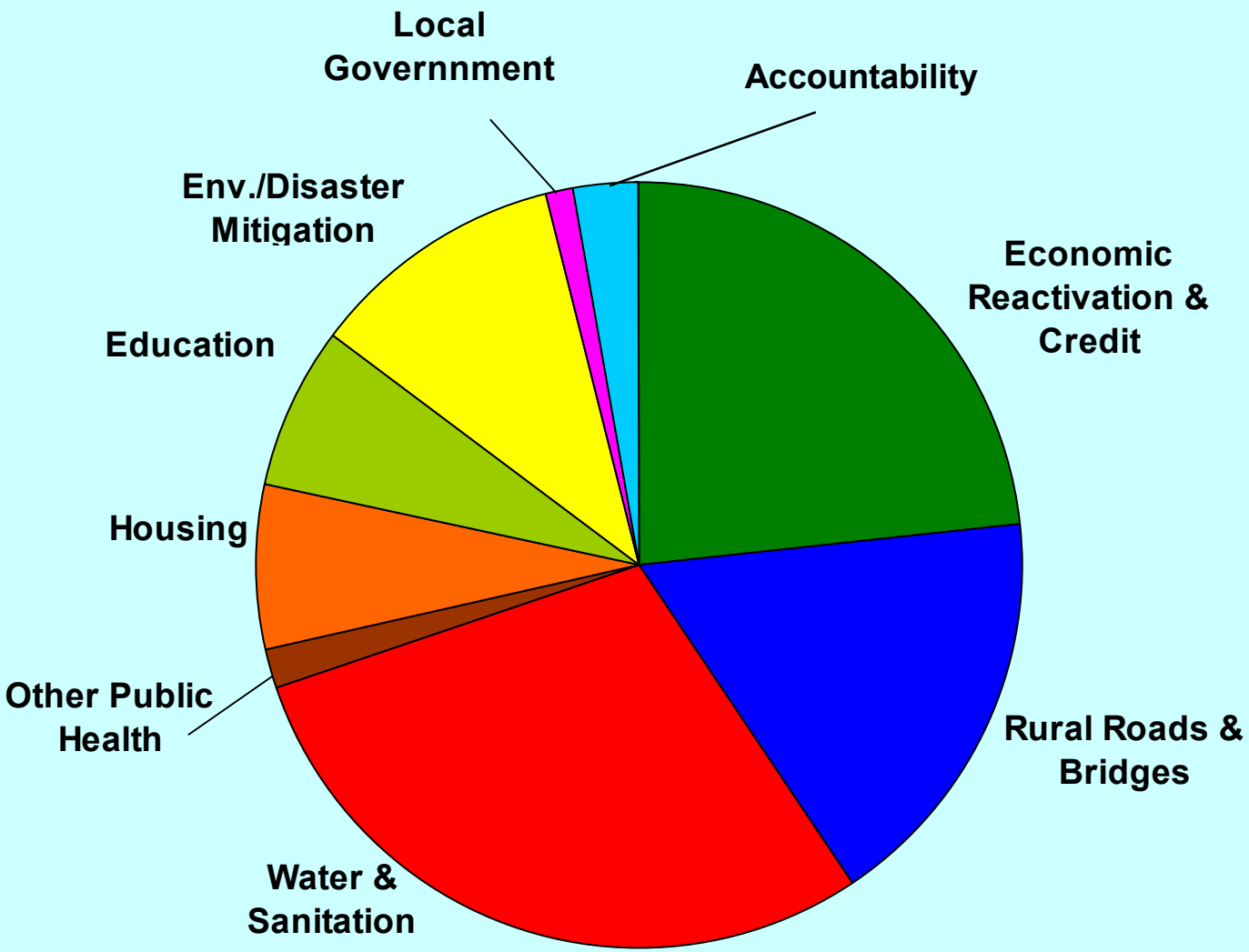
US Government Response to Hurricane Mitch: Honduras

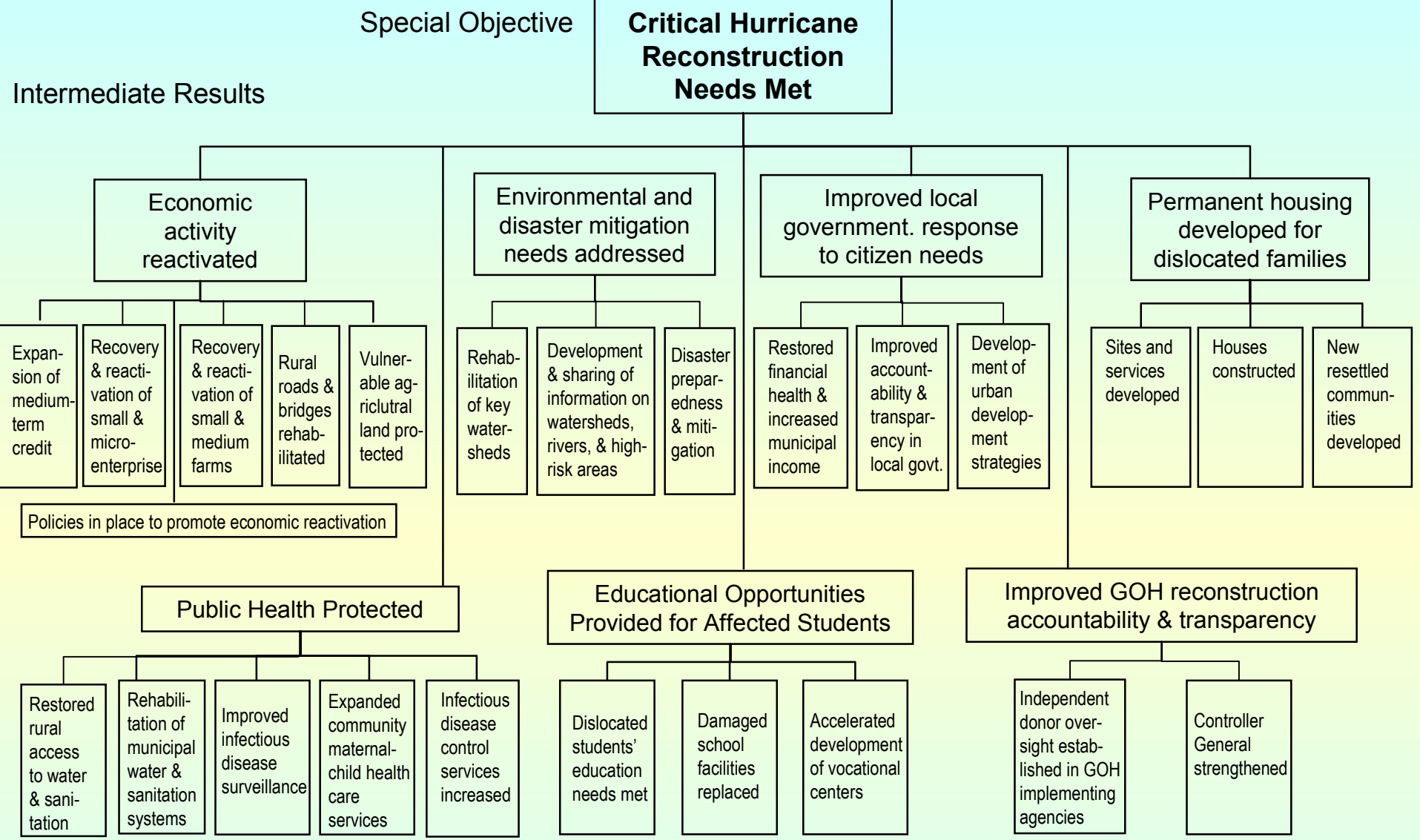
USAID/USGS
Reconstruction Program

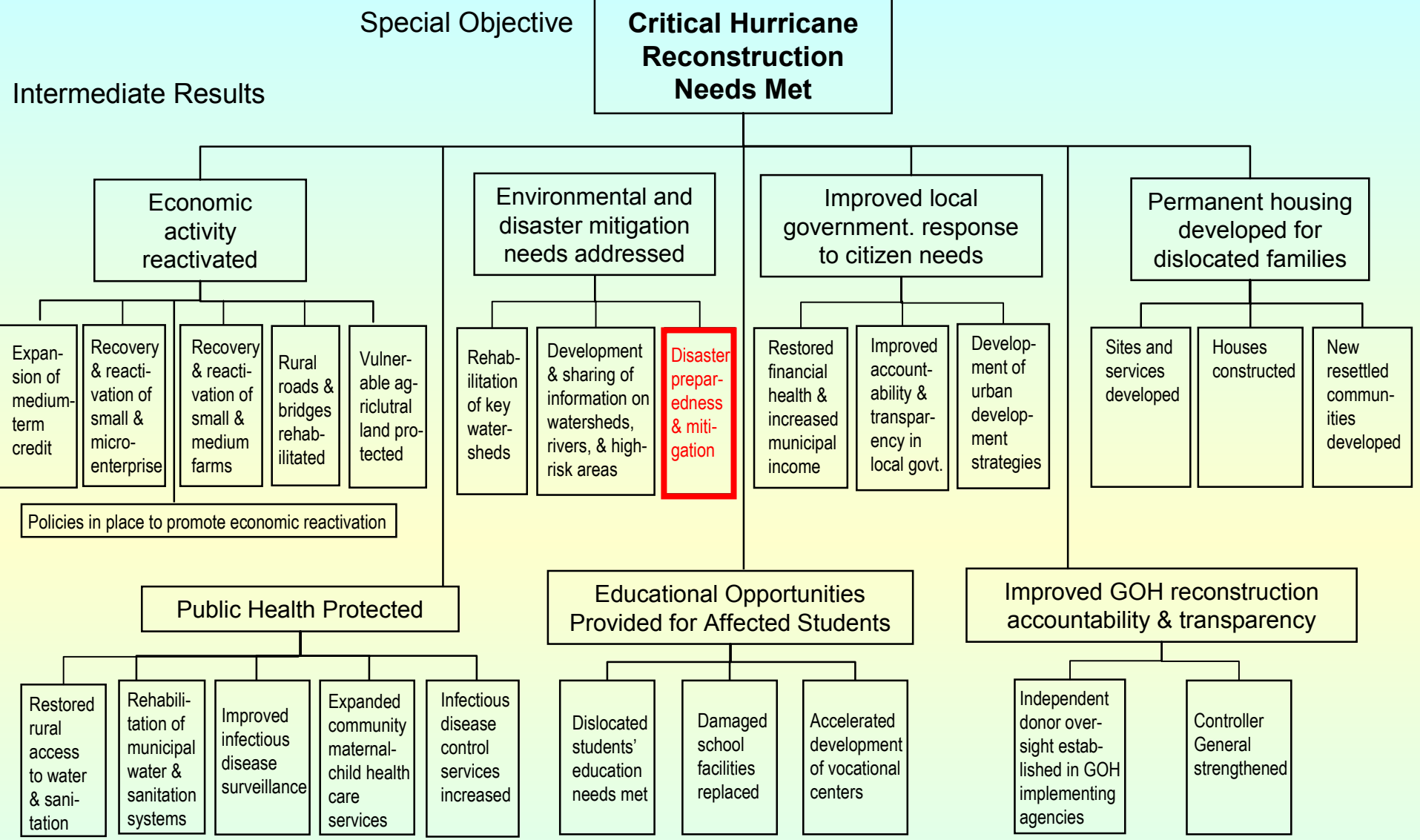
U.S. Government Agencies Involved:

- USAID
- Army Corps of Engineers
- Dept. of Agriculture
- Dept. of Commerce
- Dept. of Energy
- Dept. of Health and Human Services/CDC
- Dept. of Housing and Urban Development
- Dept. of the Interior/U.S. Geological Survey
- Dept. of Transportation
- Environmental Protection Agency
- Ex-Im Bank
- Federal Emergency Management Agency
- Immigration and Naturalization Service
- Inter-American Foundation
- OPIC
- Peace Corps

The Supplemental Program:




Special Objective
Critical Hurricane Reconstruction Needs Met
Intermediate Results
Economic activity reactivated
Environmental and disaster mitigation needs addressed
Improved local government. response to citizen needs
Permanent housing developed for dislocated families
Expan-sion of medium-term credit
Recovery & reacti-vation of small & micro-enterprise
Recovery & reacti-vation of small & medium farms
Rural roads & bridges rehab-ilitated
Vulner-able ag-riclutral land pro-tected
Rehab-ilitation of key water-sheds
Development & sharing of information on watersheds, rivers, & high-risk areas
Disaster prepar-edness & miti-gation
Restored financial health & increased municipal income
Improved account-ability & transpar-ency in local govt.
Develop-ment of urban develop-ment strategies
Sites and services developed
Houses constructed
New resettled commun-ities developed
Policies in place to promote economic reactivation
Public Health Protected
Educational Opportunities Provided for Affected Students
Improved GOH reconstruction accountability & transparency
Restored rural access to water & sani-tation
Rehabili-tation of municipal water & sanitation systems
Improved infectious disease surveillance
Expanded community maternal-child health care services
Infectious disease control services increased
Dislocated students' education needs met
Damaged school facilities replaced
Accelerated development of vocational centers
Independent donor over-sight estab-lished in GOH implementing agencies
Controller General strengthened


Special Objective
Critical Hurricane Reconstruction Needs Met
Intermediate Results
Economic activity reactivated
Environmental and disaster mitigation needs addressed
Improved local government. response to citizen needs
Permanent housing developed for dislocated families
Expan-sion of medium-term credit
Recovery & reacti-vation of small & micro-enterprise
Recovery & reacti-vation of small & medium farms
Rural roads & bridges rehab-ilitated
Vulner-able ag-riclutral land pro-tected
Rehab-ilitation of key water-sheds
Development & sharing of information on watersheds, rivers, & high-risk areas
Disaster prepar-edness & miti-gation
Restored financial health & increased municipal income
Improved account-ability & transpar-ency in local govt.
Develop-ment of urban develop-ment strategies
Sites and services developed
Houses constructed
New resettled commun-ities developed
Policies in place to promote economic reactivation
Public Health Protected
Educational Opportunities Provided for Affected Students
Improved GOH reconstruction accountability & transparency
Restored rural access to water & sani-tation
Rehabili-tation of municipal water & sanitation systems
Improved infectious disease surveillance
Expanded community maternal-child health care services
Infectious disease control services increased
Dislocated students' education needs met
Damaged school facilities replaced
Accelerated development of vocational centers
Independent donor over-sight estab-lished in GOH implementing agencies
Controller General strengthened

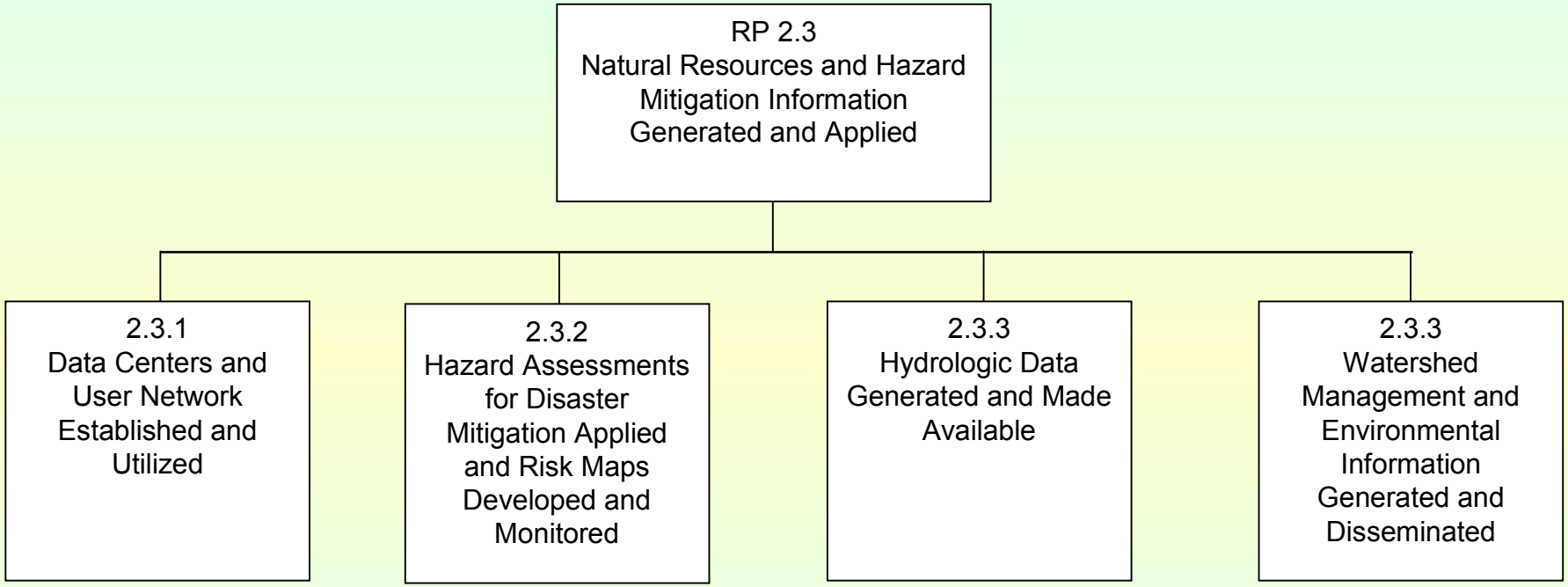
Problems to be Addressed:

1. Lack of Information for:

   - ***Disaster Preparedness and Response***
   - ***Natural Resources Management***
   - ***Hazard Assessment and Mitigation***
   - ***Specifications for Infrastructure***
   - ***Land-Use Management/Planning***

2. Lack of Reliable Repository for Storage/Dissemination of Critical Information (no linkages in place)

Results Package 2.3
Natural Resources and Hazard Mitigation Information Generated & Applied



RP 2.3

Budget

USGS (IAA)	$7.615 million
USAID	$2.0 million

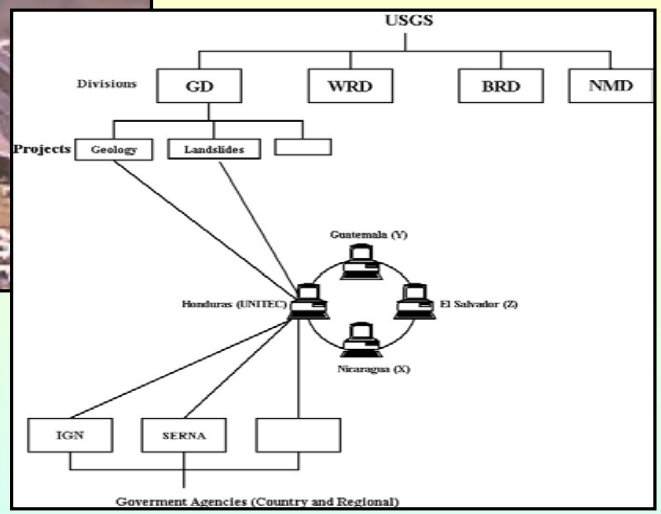
Personnel

D. Pedreros	USGS, UNITEC
J. Walkey	USGS, FUNDEMUN
G. Wilkie	Program Assistant, USAID
A. Oviedo	Non-PSC, SERNA
S. Damas	FUNDEMUN

Results Package 2.3
Natural Resources and Hazard Mitigation Information Generated & Applied

RP 2.3
Natural Resources and Hazard Mitigation Information Generated and Applied

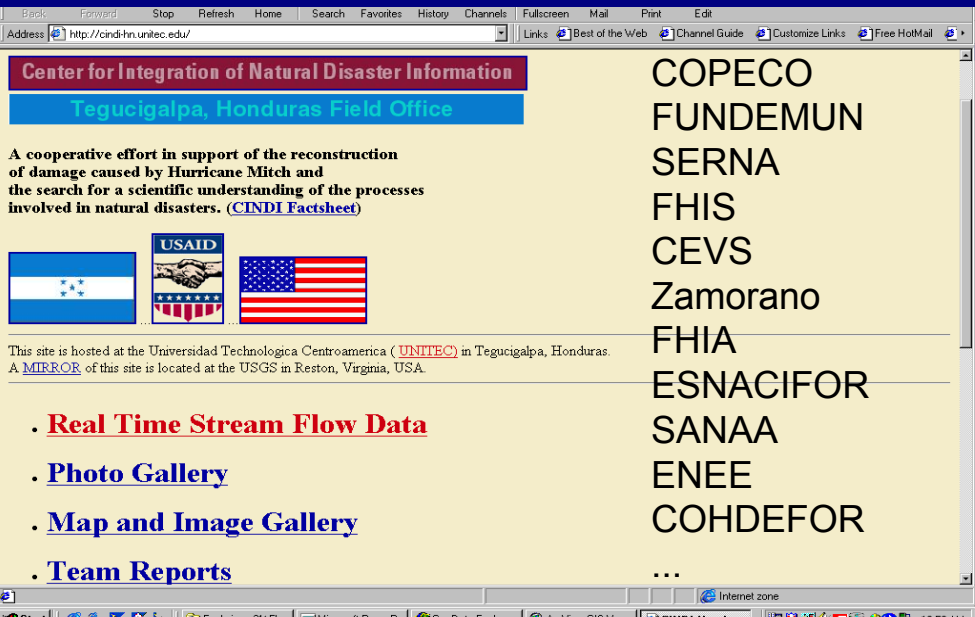
2.3.1
Data Centers and User Network Established and Utilized



Data Center

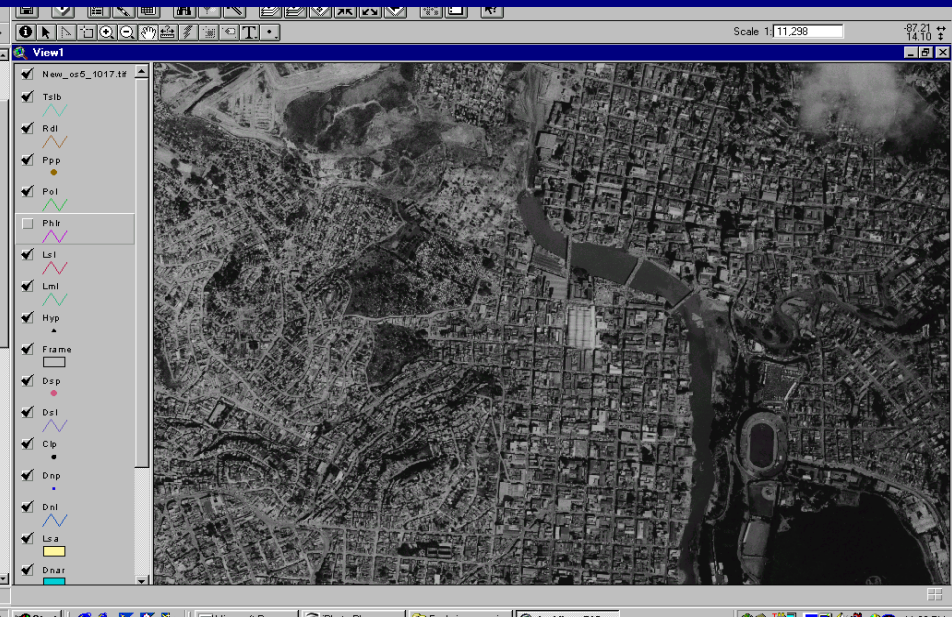
Training and Technical Assistance

Linked Network of Users



COPECO
FUNDEMUN
SERNA
FHIS
CEVS
Zamorano
FHIA
ESNACIFOR
SANAA
ENEE
COHDEFOR
...

Integrated Database Developed



Training

Date	Description	Location	Organizations	# trainees	Length (days)
6/1999	Maintenance of streamgage equipment	Tegucigalpa (SERNA)	SERNA, ENEE, COPECO	10	2
8/1999	River measurement instrumentation workshop	Tegucigalpa (UNITEC)	SERNA, SANAA, ENEE, Zamorano, COPECO	20	1
9/1999	Instruction in measurement of river flows	Sula Valley	SERNA, ENEE, CEVS	5	5
10/1999	Geospatial Data collection and dissemination	Sioux Falls, SD	IGN, SERNA, UNITEC	10	10
11/1999	Hydrologic data analysis and “computation”	Tegucigalpa (UNITEC)	SERNA, COPECO, ENEE, Zamorano, CEVS	20	5
1/2000	Landslides hazards workshop	Tegucigalpa (COPECO)	SERNA, COPECO, UNAH	15	3
1/2000	Hydrologic data collection	Tegucigalpa (UNITEC)	SERNA, COPECO, ENEE, Zamorano, CEVS	15	1
4/2000	Advanced spatial data analysis utilizing GIS	Tegucigalpa (UNITEC)	SERNA, UNITEC	10	3
5/2000	Basic analysis and computation of surface water data	Tegucigalpa (UNITEC)	SERNA, UNITEC, ENEE, SANAA, CEVS, COPECO	10	2
6-7/2000	Suite of 5 courses	Tegucigalpa (UNITEC)	SERNA, SOPTRAVI, CEVS, IGN, UNITEC, COPECO, SANAA, Zamorano, Esnacifor, FUNDEMUN	18	6 wks
8-9/2000	Suite of 5 courses	Tegucigalpa (UNITEC)	SERNA, SOPTRAVI, CEVS, IGN, UNITEC, COPECO, SANAA, FUNDEMUN	20	6 wks
8/2000	Computation and analysis of streamflow data	San Juan, PR (World Learning)	SERNA, ENEE, CEVS	11	10
9/2000	Surveying utilizing global positioning systems worshop	Tegucigalpa (USAID/UNITEC)	SERNA, SOPTRAVI, CEVS, IGN, USAID, UNITEC, COPECO, SANAA	25	3
10/2000	Advanced GIS and spatial data interpretation	Sioux Falls, SD (World Learning)	SERNA, IGN, UNITEC, COPECO, Tegucigalpa, UNAH	10	10
10/2000	Hydraulic computation of river flow	Tegucigalpa (COPECO)	SERNA, ENEE, Zamorano	15	1
10/2000	Groundwater data collection and analysis	Tucson, AZ (World Learning)	SANAA, FUNDEMUN, DIMA	3	5
11/2000	ArcInfo (GIS)	Tegucigalpa (COPECO)	SERNA, IGN, UNITEC, COPECO	26	10

	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			by quarter (cumulative)					
Development of data centers (UNITEC site up and operational)	0	1	0	1	1		N/A	

	1999	2000				2001	
	Actual	Planned	Actual			Planned	Actual
Indicator Description			by quarter (cumulative)				
Data user network – number of organizations (municipalities, NGO's, GOH dependencies) in user network		20	0	10	20	40 (cumulative)	

	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			by quarter (cumulative)					
Number of network users with staff trained in basic map application	0	20	5	15	25		40 (aggregate)	
Number of network users incorporating basic GIS maps into disaster mitigation/natural resource management plans	2	20	2	12	22		40 (aggregate)	

Results Package 2.3
Natural Resources and Hazard Mitigation Information Generated & Applied

RP 2.3
Natural Resources and Hazard Mitigation Information Generated and Applied

2.3.1
Data Centers and User Network Established and Utilized

2.3.2
Hazard Assessments for Disaster Mitigation Applied and Risk Maps Developed and Monitored

Flood Risk Maps

Landslide Inventories & Risk Maps

	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			by quarter (cumulative)					
Flood risk maps developed and disseminated (utilizing hydraulic simulations)	0	7	0	0	0		15 (cumulative)	

	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			by quarter (cumulative)					
Landslide inventory/risk maps developed and disseminated	1	15	1	1	10		30 (cumulative)	
Number of user units with personnel trained in flood risk, landslide risk, and overall risk map/data application	0	20	15	15	15		40 (cumulative)	

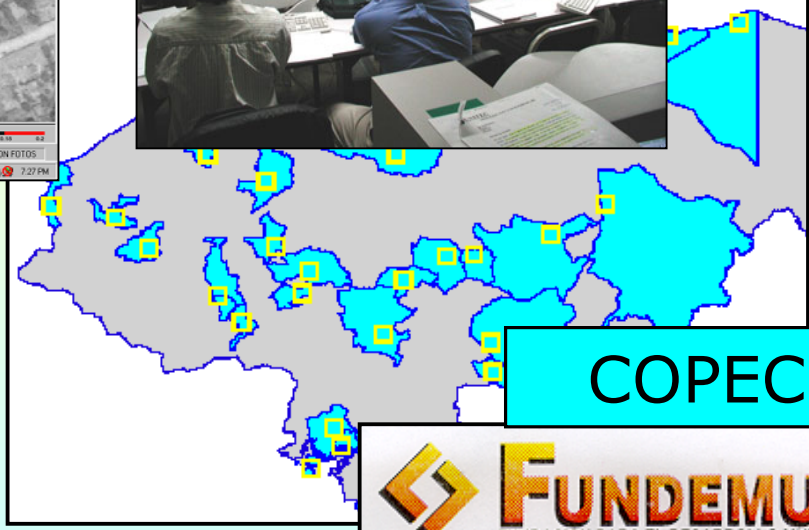
	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			**By quarter (cumulative)**					
Number of disaster assessments made for selected municipalities, and assessment reports disseminated	5	5	5	6	7		10 **(cumulative)**	

Groundwater Data
Biological Resources Data

ge 2.3
nformation Ge

Hazard
Applied

rogram

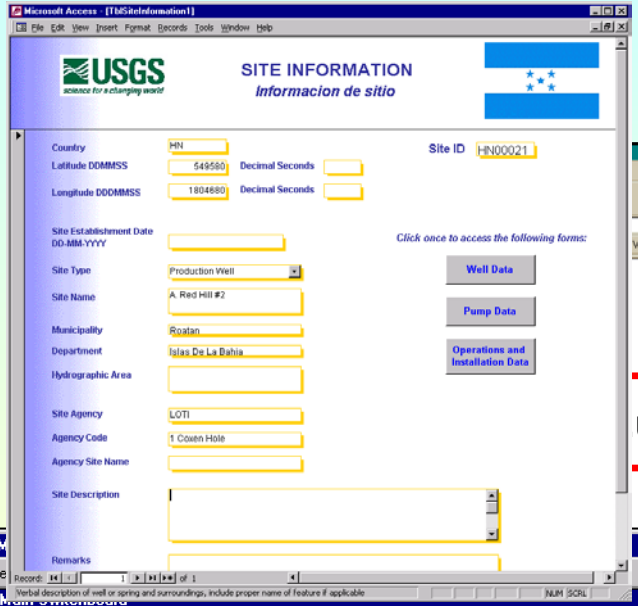


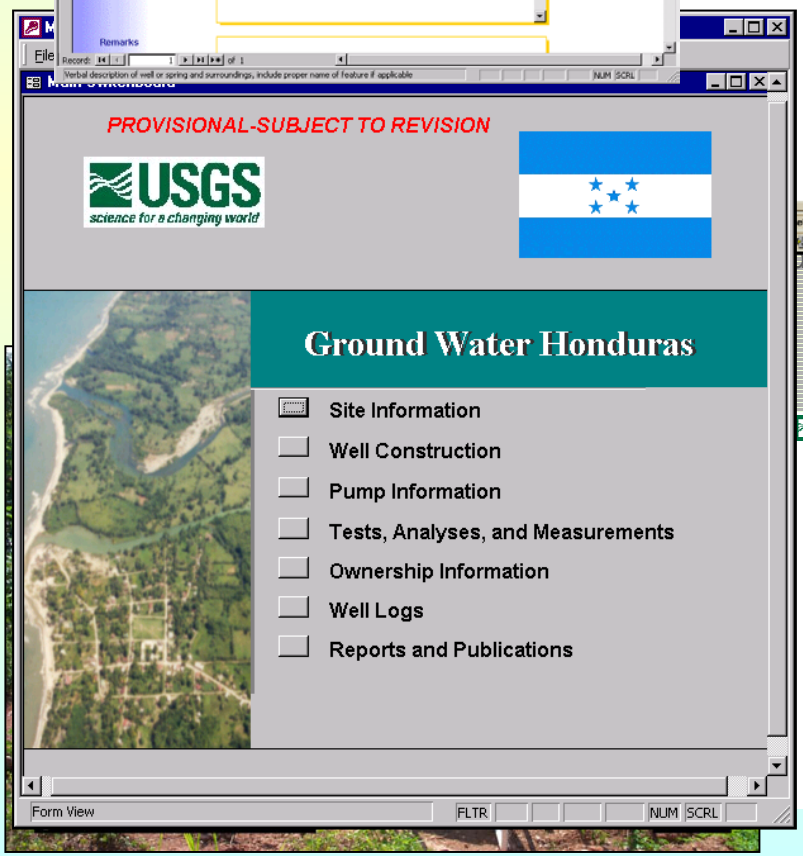
COPECO

FUNDEMUN
FUNDACION PARA EL DESARROLLO MUNICIPAL


Digital Topographic Maps of
Countries Affected by Hurricane Mitch
Scale - 1:250,000
Compiled by the U.S. Geological Survey
02 February 2000
Software by:
Environmental
Systems
Research
Institute
Copyright 1997
USGS
science for a changing world
Installation Steps:
1) Uninstall ArcExplorer if already installed
2) Launch USGS_GDX.EXE to install GeoData Explorer
3) Launch GeoData Explorer from desktop icon
To use on CD after software installation:
4a) Open folder "CA_TOPO": dbl click on "CA_Maps"
(ArcView users: launch "ArcView.apr"
For faster performance drag
"CA_TOPO" folder (550mb) to
hard drive

	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			by quarter (cumulative)					
Number of municipal GIS products produced and disseminated	2	20	2	2	2		40 (cumulative)	

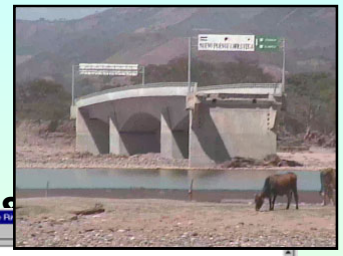


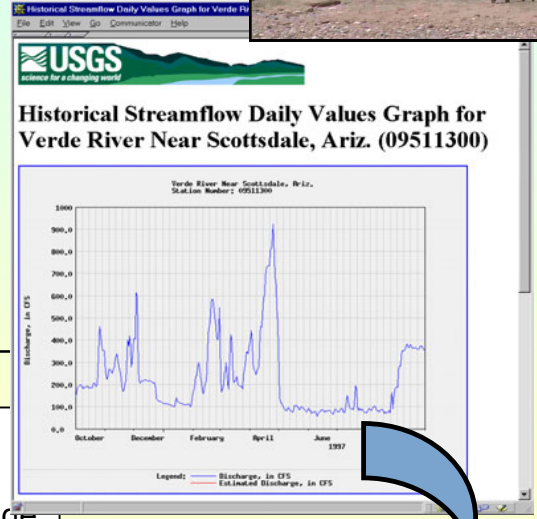


Package 2.3

gation Information

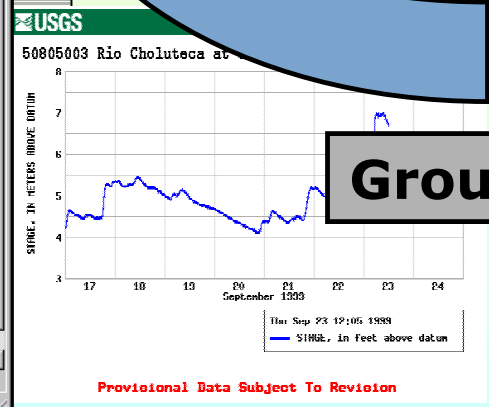
P 2.3
urces and Haza
Informatio
d and





2.3.3
Hydrologic Data
Generated and Made
Available

Hydrologic Database



Groundwater Database

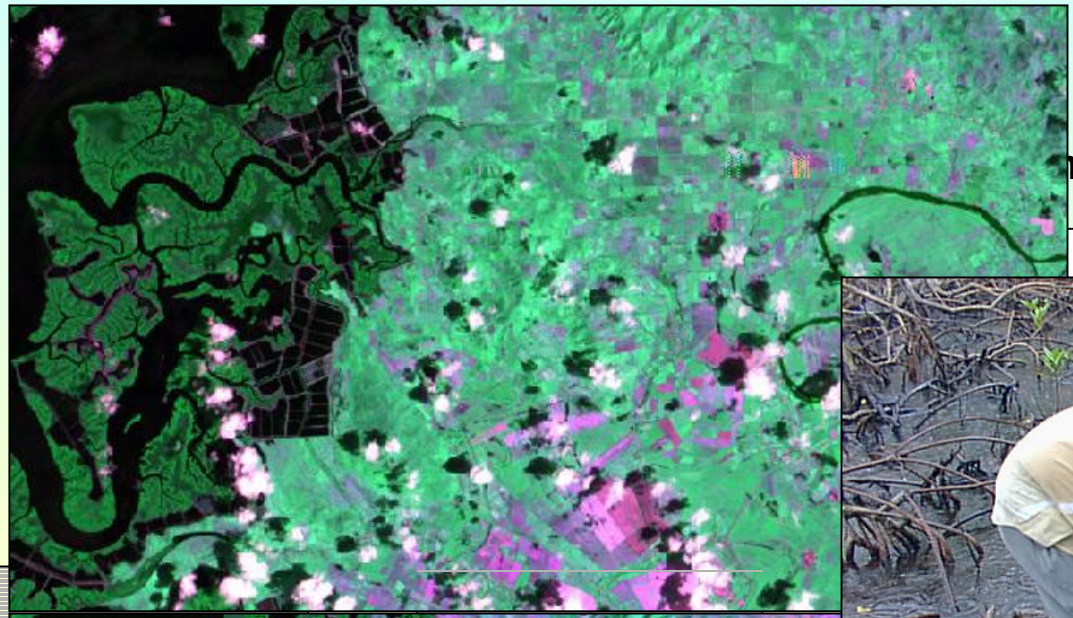
	1999	2000				2001	
	Actual	Planned	Actual			Planned	Actual
Indicator Description			**by quarter (cumulative)**				
Number of new units in national streamflow gaging station network (includes precipitation-only gages installed at the request of SERNA)	3*	13 **(cumulative)**	9	13	16	23 **(cumulative)**	
Total number of streamflow/rainfall gaging stations on Internet	3*	20 **(cumulative)**	9	10	19	40 **(cumulative)**	

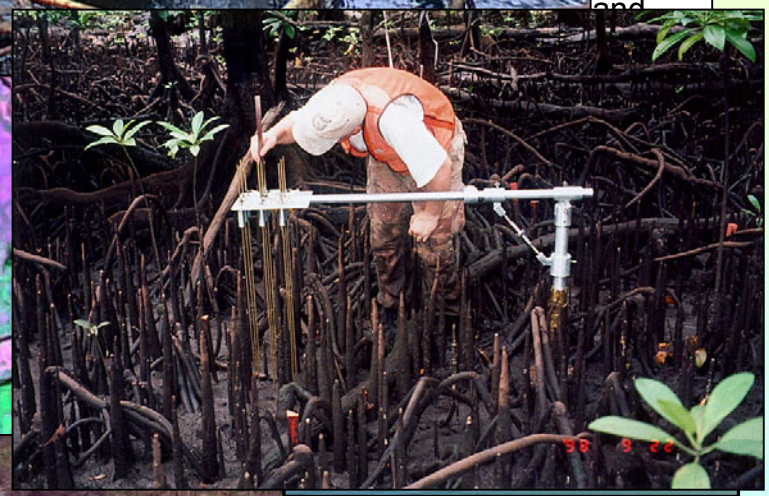
*Constructed with reprogrammed and not supplemental funds

	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			by quarter **(cumulative)**					
National groundwater database developed[1]	0	1	0	0	0		1 **(cumulative)**	

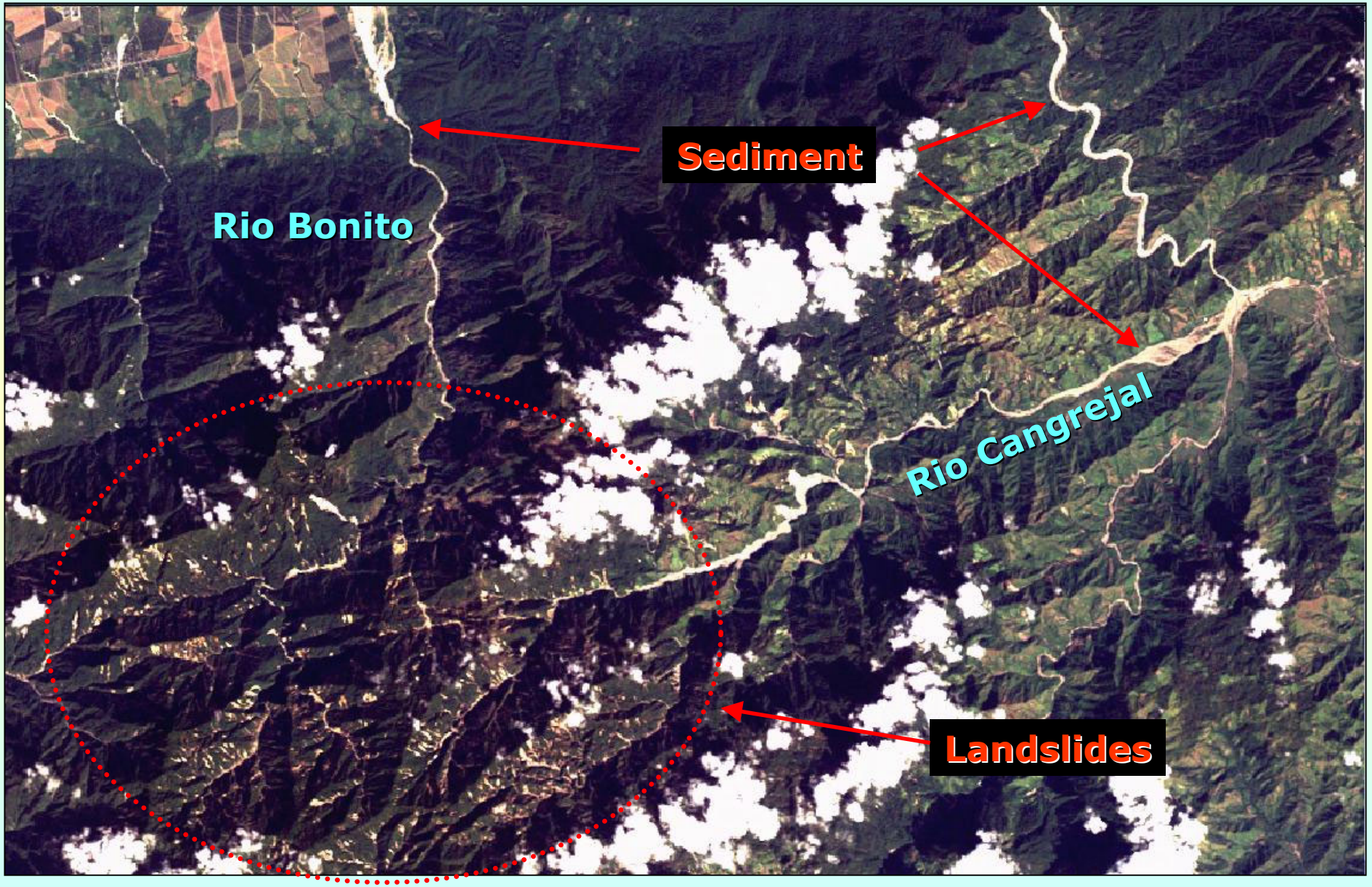
[1]The original indicator for IR 2.3.3 read “Groundwater availability studies integrated in GIS”. This description reflected earlier plans for a series of groundwater studies with data to be integrated into a GIS. However, no groundwater studies will be conducted under this RP, and, therefore, the new indicator better describes USGS objectives under this Intermediate Result.

	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			by quarter (cumulative)					
Number of network users with personnel trained in surface water and groundwater data package application	15	20	15	25	28		40 (cumulative)	
Number of network users incorporating surface water and groundwater data in disaster mitigation/natural resource management plans	5	20	10	10	23		40 (cumulative)	

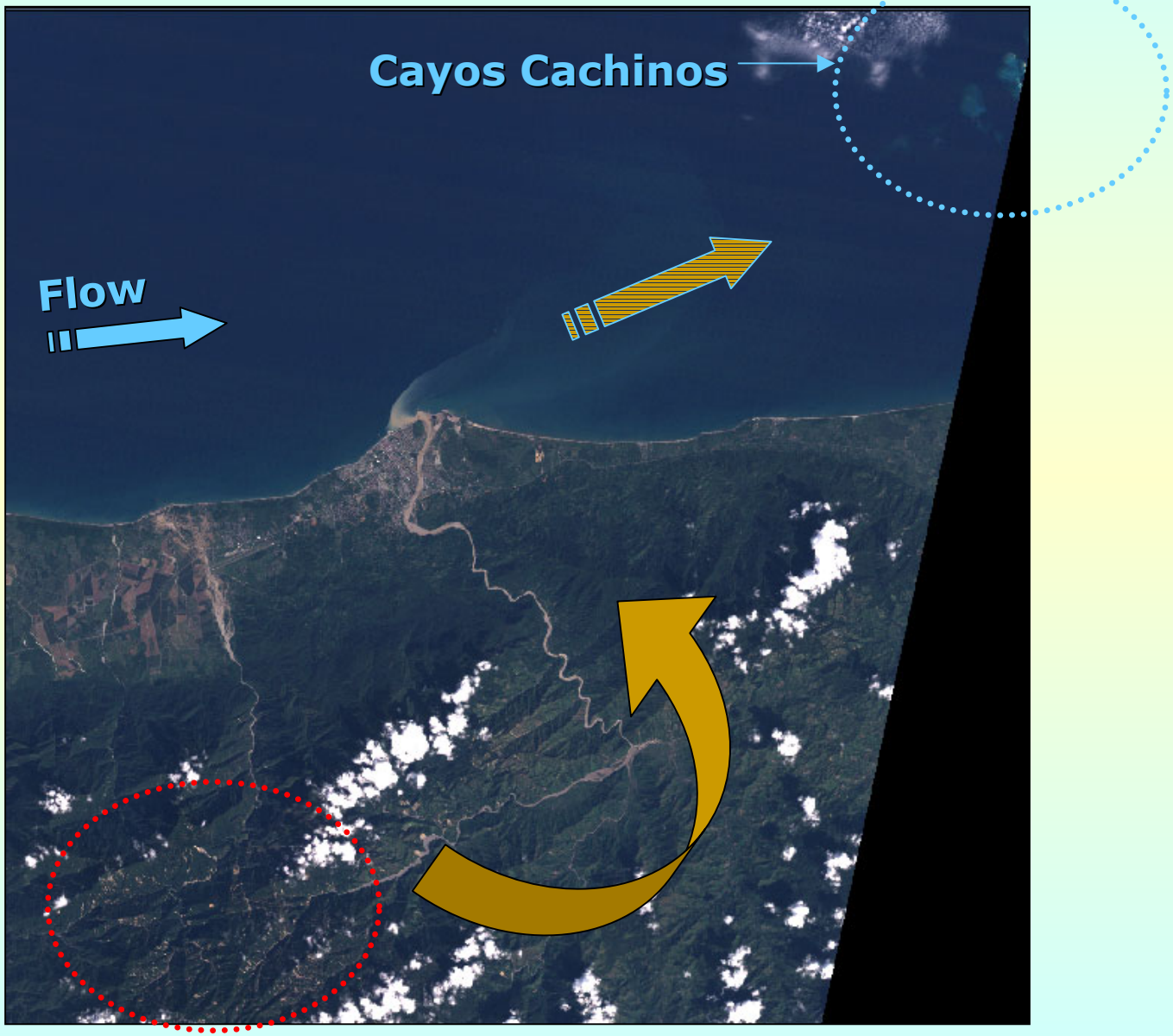




Landslides in Pico Bonito National Park



Landslide Impacts on Coral Reefs

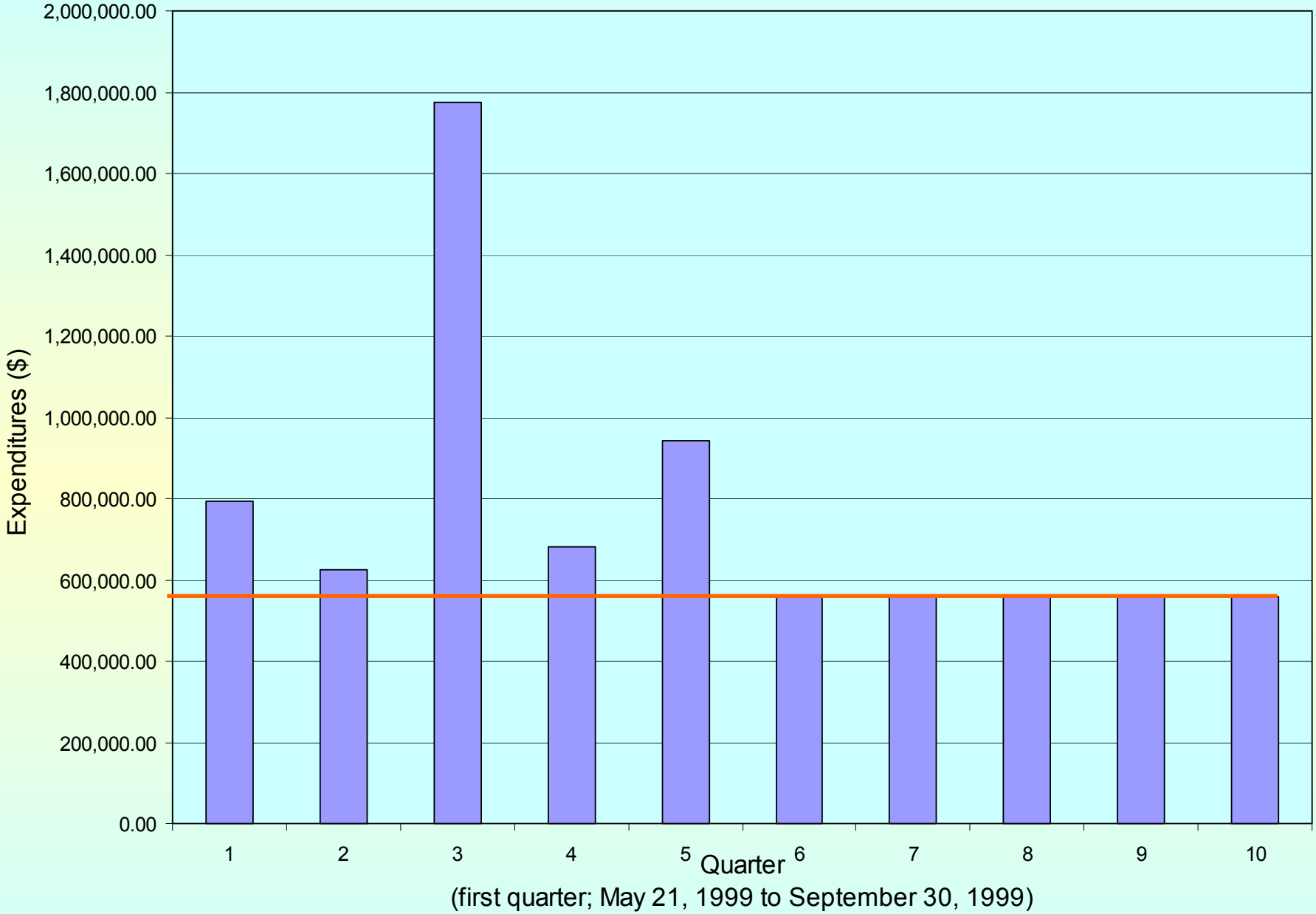


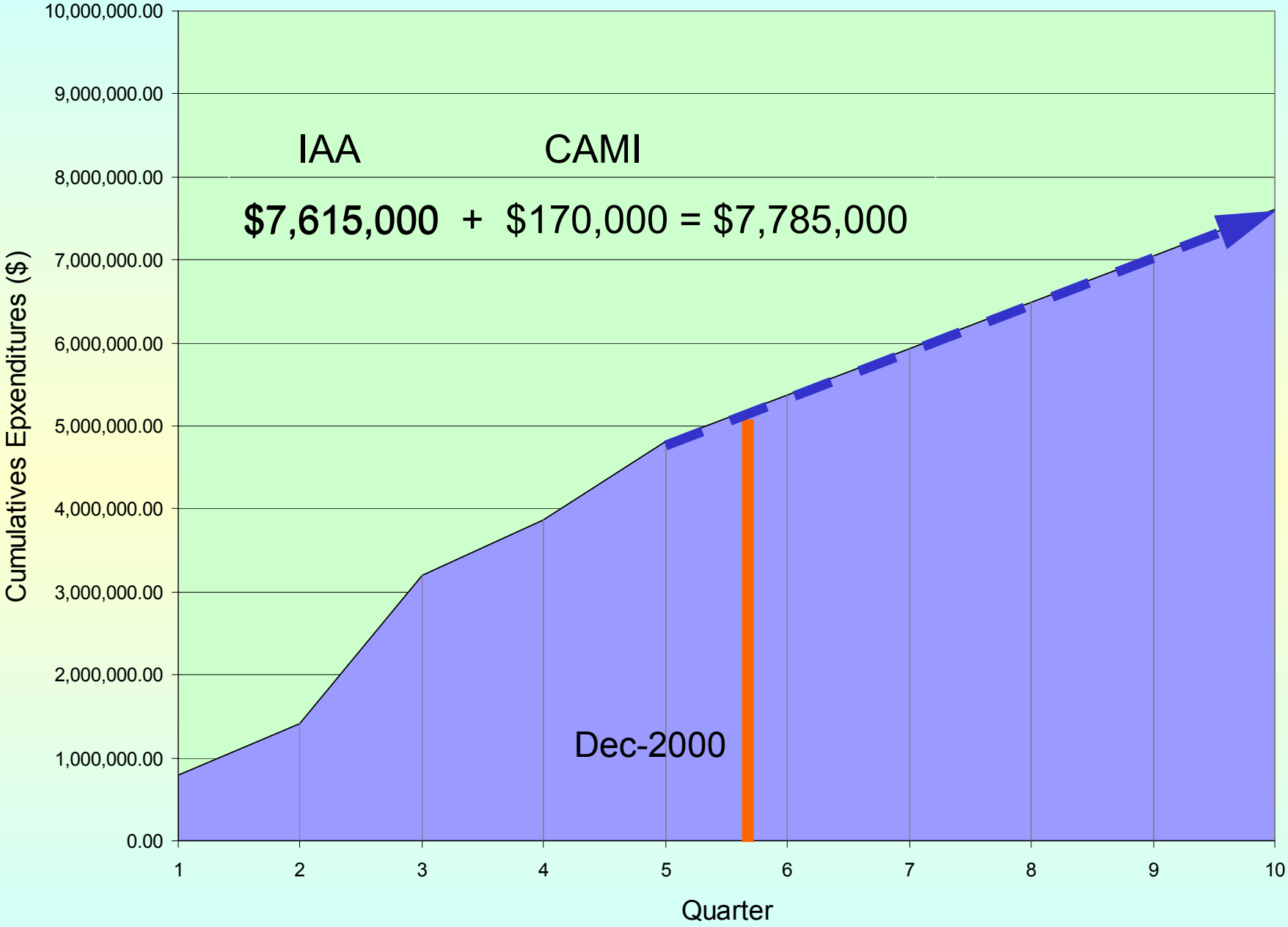
	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			by quarter (cumulative)					
North coast bay island coral reef and intertidal zone damage assessment carried out	0	1	0	0	1		1	
Number of coral reef and intertidal zone reports and factsheets produced and disseminated	0	1	0	0	0		2 (cumulative)	
Number of counterpart personnel trained in coral reef assessment data collection techniques	0	5	5	5	5		10 (cumulative)	

	1999	2000					2001	
	Actual	Planned	Actual				Planned	Actual
Indicator Description			by quarter (cumulative)					
Gulf of Fonseca sedimentation, Mangrove health, and water quality assessment carried out	0	1	0	0	1		1	
Gulf of Fonseca water quality, Mangrove health, and sedimentation monitoring reports and factsheets produced and disseminated	0	1	0	0	0		2 (cumulative)	

Total Gross Funds Available in Account	FY 1999 Gross Funds Expended during the period May 21, 1999 to September 30, 1999	Funds Expended during the period October 1, 1999 to December 31, 1999 (1st Quarter 2000)	Funds Expended during the period January 1, 2000 to March 31, 2000 (2nd Quarter 2000)	Funds Expended during the period April 1, 2000 to June 30, 2000 (3rd Quarter 2000)	Funds Expended during the period July 1, 2000 to September 30, 2000 (4th Quarter 2000)	Total Funds Expended	% Spent
7,615,000.00	792,187.52	624,417.80	1,774,619.33	681,119.62	942,221.68	4,814,566.01	63%

Total Gross Funds Available in Account (as of October 1, 2000)	Projection of Gross Funds Expended during the period October 1, 2000 to December 31, 2000	Projection of Gross Funds Expended during the period January 1, 2001 to March 31, 2001	Projection of Gross Funds Expended during the period April 1, 2001 to June 31, 2001	Projection of Gross Funds Expended during the period July 1, 2001 to September 30, 2001	Projection of Gross Funds Expended during the period October 1, 2001 to December 31, 2001	Total Funds Expended during Life of Program	% Spent
2,800,434	560,086	560,086	560,086	560,086	560,086	7,615,000	100%


2,000,000.00
1,800,000.00
1,600,000.00
1,400,000.00
1,200,000.00
1,000,000.00
800,000.00
600,000.00
400,000.00
200,000.00
0.00
Expenditures ($)
1
2
3
4
5
6
7
8
9
10
Quarter
(first quarter; May 21, 1999 to September 30, 1999)


10,000,000.00
9,000,000.00
8,000,000.00
7,000,000.00
6,000,000.00
5,000,000.00
4,000,000.00
3,000,000.00
2,000,000.00
1,000,000.00
0.00
Cumulatives Epxenditures ($)
IAA
CAMI
$7,615,000 + $170,000 = $7,785,000
Dec-2000
1
2
3
4
5
6
7
8
9
10
Quarter

USAID: ($1,850,000)

1. UNITEC Cooperative Agreement
2. Salaries
3. Procurement of hardware/software for counterpart organizations
4. World Learning (US training for CY2000)
5. MAARD: Acquisition of Ground Control Points for municipal GISs (contract for technical services)
6. MAARD: Procurement of streamflow monitoring equipment as outlined in RP2.3
7. World Learning (US training for CY 2001)

Item #	Committed	Expenditures to Date	MAARDs in Progress
1	$1,000,000	$224,371.14	
2	$57,000	$7,343.92	
3	$453,175.00	$163,426.92	
4	$127,825 (est)	$127,825 (est)	
5			$50,000
6			$100,000
7			$80,000

January TDY Schedule: Honduras

	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Personnel																																
Hernandez									WRD-Streamgaging																							
Arroyo									WRD-Streamgaging																							
Murray									ENEE Program																							
Ohe/other								ENEE Program																								
Smith			WRD-Streamgaging									WRD-Streamgaging																				
Dave Kresh							WRD-FIELD SURVEYS																									
Marc Mastin							WRD-FIELD SURVEYS																									
Roberto Gutierrez							WRD-FIELD SURVEYS																									
Philippe Hensel														Biologists																		
Larry Handley														Biologists																		
Jesse Thibodeux														Biologists																		
Tommy Michot														Biologists																		
Don														Biologists																		
Brian														Biologists																		
Karen														Biologists																		
Ed														Biologists																		
Bart Green																																
George Ward																																
W. Meehan/Option 1																					Groundwater											

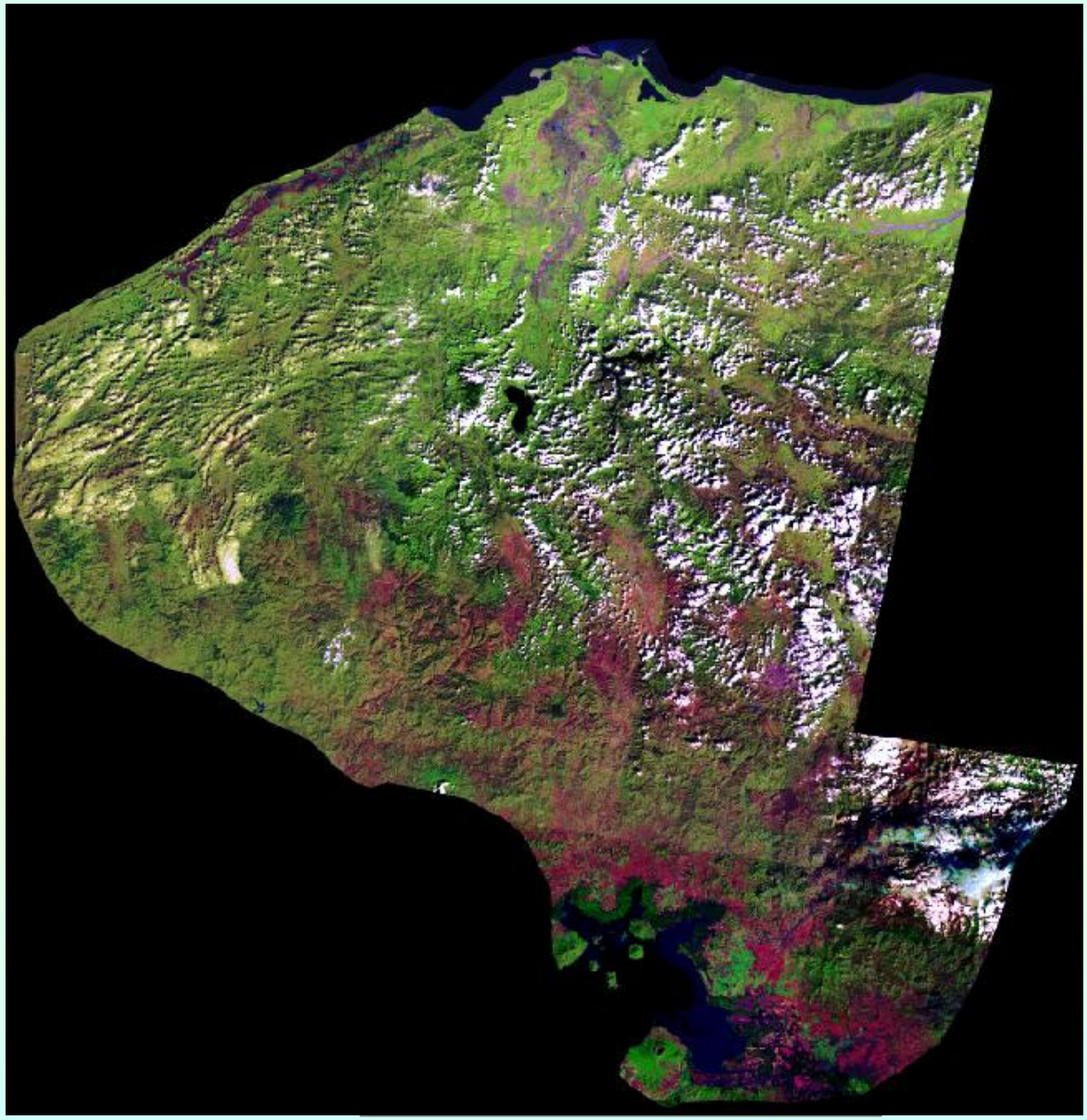
January Vehicle Assignments; Honduras

	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Personnel																																
Hernandez									WRD-Streamgaging																							
Arroyo									WRD-Streamgaging																							
Murray									ENEE Program																							
Ohe/other								ENEE Program																								
Smith			WRD-Streamgaging									WRD-Streamgaging																				
Dave Kresh							WRD-FIELD SURVEYS																									
Marc Mastin							WRD-FIELD SURVEYS																									
Roberto Gutierrez							WRD-FIELD SURVEYS																									
Philippe Hensel														Biologists																		
Larry Handley														Biologists																		
Jesse Thibodeux														Biologists																		
Tommy Michot														Biologists																		
Don														Biologists																		
Brian														Biologists																		
Karen														Biologists																		
Ed														Biologists																		
Bart Green																			biologists													
George Ward																			biologists													
W. Meehan/Option 1																					Groundwater											

- ✓Itinerary – for hotel reservations
- ✓Number of local assistants required
- ✓Translator required

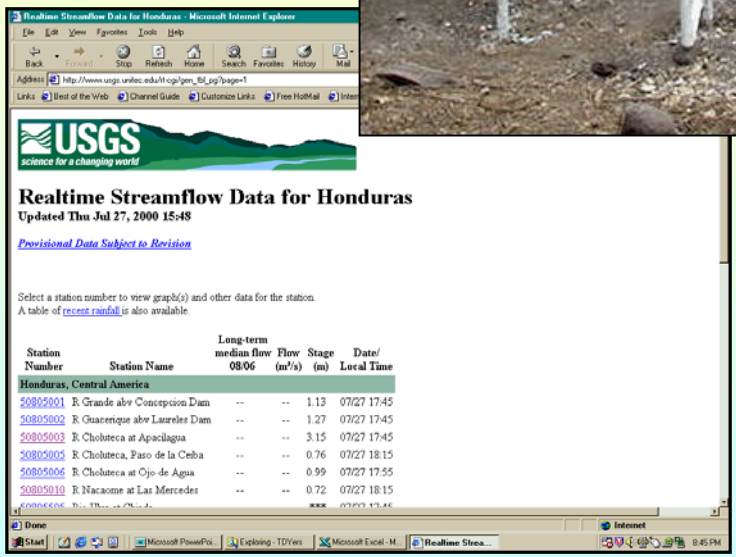
Extra-Supplemental Programs:

1. *SERNA/AOT*
2. *ENEE*
3. *CAMI*
4. *World Bank*



Extra-Supplemental Programs:

1. *SERNA/AOT*
2. *ENEE*
3. *CAMI*
4. *World Bank*



Realtime Streamflow Data for Honduras - Microsoft Internet Explorer

USGS science for a changing world

Realtime Streamflow Data for Honduras

Updated Thu Jul 27, 2000 15:48

Provisional Data Subject to Revision

Select a station number to view graph(s) and other data for the station.
A table of recent rainfall is also available.

Station Number	Station Name	Long-term median flow 08/06	Flow (m^3/s)	Stage (m)	Date/ Local Time
Honduras, Central America					
50805001	R Grande abv Concepcion Dam	--	--	1.13	07/27 17:45
50805002	R Guacerique abv Laureles Dam	--	--	1.27	07/27 17:45
50805003	R Choluteca at Apacilagua	--	--	3.15	07/27 17:45
50805005	R Choluteca, Paso de la Ceiba	--	--	0.76	07/27 18:15
50805006	R Choluteca at Ojo de Agua	--	--	0.99	07/27 17:55
50805010	R Nacaome at Las Mercedes	--	--	0.72	07/27 18:15

Extra-Supplemental Programs:

1. *SERNA/AOT*
2. *ENEE*
3. *CAMI*
4. *World Bank*

Extra-Supplemental Programs:

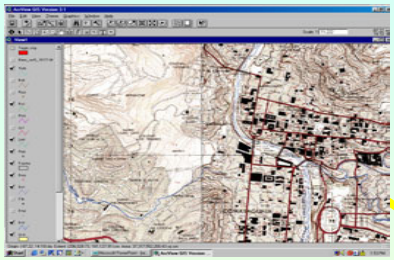
1. *SERNA/AOT*
2. *ENEE*
3. *CAMI*
4. *World Bank*

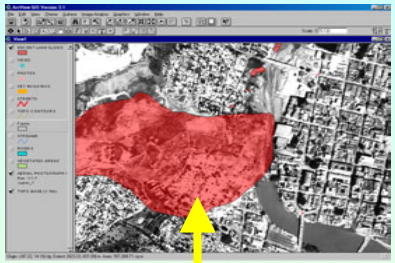
Proposed January 2001 Trip Itinerary 16 October, 2000

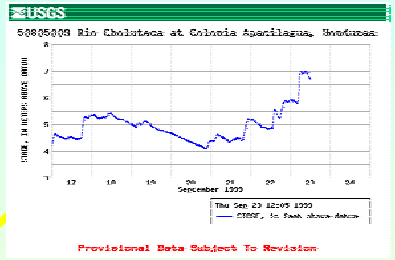
Codes: Blue = commercial flight; Red = USGS Float Plane

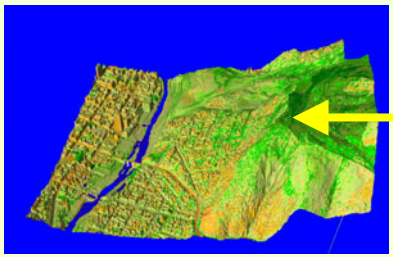
Date	Karen, Ed's crews	Don, Brian	Tommy Michot	Larry, Jesse
Sa 1/13	Depart LFT for Roatan		Depart LFT w/ Alex A.	
Su 1/14	Work in Roatan			
M 1/15	Work in Roatan	Fly LFT for Pto Barrios	Arrive Pto Barrios	
T 1/16	Work in Roatan	Recon Izabal	Recon Izabal	
W 1/17	Fly to Guanaja	Recon Izabal	Recon Izabal	
Th 1/18	Work in Guanaja	Recon Manabique, Meet Fidel → Saraguate	Recon Manabique	Depart LFT for Roatan
F 1/19	Work in Guanaja	SET work Manabique	Recon Islands	Recon Islands
Sa 1/20	Fly to Teguc, drive to Sn Lorenzo	Fly to Teguc, meet up w/ Karen, Ed & crew	Recon Islands	Recon Islands
Su 1/21	Work GOF	Work GOF	Recon Islands	Recon Islands
M 1/22	Work GOF	Work GOF	Fly to GOF	Fly to GOF, Begin Ground Work
T 1/23	Work GOF, Recon GOF	Work GOF, Reon GOF	Recon GOF	Ground Work
W 1/24	Work GOF	Work GOF	Recon GOF	Recon GOF
Th 1/25	Drive to Teguc, meet w/ JP	Drive to Teguc, meet w/ JP	Recon GOF	Recon GOF
F 1/26	Return LFT	Return LFT	Return flight →	Return LFT

Data Repository...

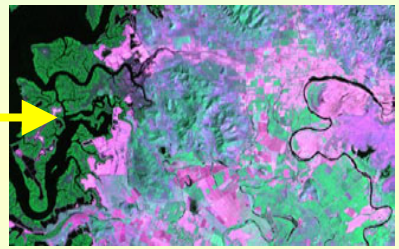


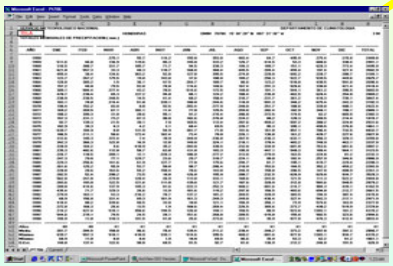






DATA CENTER (clearinghouse)





For All Sectors